AMSAT News Service Weekly Bulletins
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SB ALL @ AMSAT $ANS-314.01
PACSAT BBS TESTING CONTINUES

HR AMSAT NEWS SERVICE BULLETIN 314.01 FROM AMSAT HQ
SILVER SPRING, MD NOVEMBER 10, 1990
TO ALL RADIO AMATEURS BT

PACSAT BBS S/W Beta Testing Continues; Expected User S/W Release Nov. 17, 1990

On Sunday evening, Nov. 4, 1990, NK6K commenced the Bulletin Board System (BBS) operations on AO-16. AO-16 now becomes the second satellite to be running G0/K8KA's spacecraft application software, along with UO-14. The first file uploaded to AO-16 was a file which acknowledged all the individuals who have contributed to the MICROSAT program. Next, it was only fitting that NK6K send a congratulatory message to his colleagues at the University of Surrey (UoSat) via AO-16. Later, the AMSAT News Service (ANS) bulletins and Keplerian elements were uploaded and were earmarked to be "broadcast" continuously from AO-16.

For the next few days, G0/K8KA, NK6K and a group of carefully selected "beta" testers will continue to send messages back-and-forth in an attempt to "wring-out" any last minute software bugs which might have been missed. If no major problems are encountered, G0/K8KA's groundstation software and documentation will be release on Nov. 17, 1990. It will be available for downloading from the AMSAT/DRIG BBS at (214) 394-7438 and CompuServe's HAMNET. This software will allow users to upload and download files and allow users to receive files are continuously broadcast, for example, ANS bulletins or Keplerian elements.

**The DRIG BBS will have a brand new section in the FILES menu,
called MICROSATS ..... Go into FILES section, enter P
for Personal download, and download all of the MICROSAT telemetry
programs from this special area. This is OPEN to ALL AMSAT
members.... Please do a L;MICROSATS to get a listing of all
of the programs available to you.****

Although this first version of the groundstation software is not the "all-singing-all-dancing" software that NK6K and G0/K8KA would like for it to be, it will be more than adequate to allow those with an IBM compatible computer to start utilizing the BBS on AO-16, UO-14, and LO-19 as quickly as possible. At a later time, versions for the MacIntosh computers and upgraded IBM PC versions will be available from the AMSAT Software exchange. Look for further announcements next week in the ANS bulletins about the release and availability of the PACSAT groundstation software.
/EX
SB ALL @ AMSAT $ANS-314.02
AO-16 HAS A NEW SOUND

HR AMSAT NEWS SERVICE BULLETIN 314.02 FROM AMSAT HQ
SILVER SPRING, MD NOVEMBER 10, 1990
TO ALL RADIO AMATEURS BT

New BBS Software Gives A New Sound To A Young OSCAR

Since the commencement of BBS operations on AO-16 this week, users will find AO-16 sounds quite different from what they remember from the previous weeks. The biggest change AO-16 users will notice is that the 70 cm downlink trans-

mitter is now sending data continuously. But even without the groundstation software, which is planned for a Nov. 17, 1990 release, it is still possible for you to see what is being sent on the downlink. The first thing you need to do is turn TRACE ON on your TNC-2. After doing this you will get a "hex" dump of the raw data frames being received by your TNC-2. Although this technique for receiving packet frames from AO-16 is not the normal way to receive packets, it will allow you to get a peek a what files are being broadcast and other file activity. For those who still wish to digipeat or who want to examine the telemetry, the BBS software will not change these functions, however, telemetry will be sent every 30 seconds as compared to every 10 seconds and digipeating will take more time because of all the other data on the downlink.

The one thing that users who start using the groundstation software will immediately notice is that using AO-16's BBS will be quite different from FO-20's BBS. If you try to connect to AO-16 without the proper groundstation software, after awhile you will be logged off. But when the proper software is used, it will allow users to compose messages off line and upload them very efficiently. If you fail to get the entire message uploaded during a single pass, the ground station software will remember where you were and it is from that point you can continue to upload on the next pass. The same holds for downloading a file; if it doesn't get completely downloaded during a pass, the groundstation software will remember where you were and will pick the file at that particular point on the next pass. The software protocol to perform these very "smart" file transfer operations will greatly facilitate packet traffic handling. It is AMSAT's hope that the PACSATs, ie., AO-16, LO-19, UO-14, will provide another powerful means for communication between radio amateurs worldwide.

[If you have questions on the protocols, you may reach NK6K on CompuServe at 71635,1174 or at nk6k@tomcat.gsfc.nasa.gov. G0/K8KA can be reached at k8ka@tomcat.gsfc.nasa.gov.]
/EX
SB ALL @ AMSAT $ANS-314.03
BALLOON LAUNCH ANNOUNCEMENTS

HR AMSAT NEWS SERVICE BULLETIN 314.03 FROM AMSAT HQ
SILVER SPRING, MD NOVEMBER 10, 1990
TO ALL RADIO AMATEURS BT

Denver ATV Balloon Launch on Nov. 18, 1990 & Illinois Launch Dec. 1, 1990

A local Denver, CO AMSAT group and ATV enthusiasts are busily preparing for their upcoming balloon launch. The launch will be on Sunday, November 18, 1990 at 9:30 A.M. MST with a weather hold backup day of December 2nd again at 9:30 A.M. MST. The balloon should reach an altitude of 100,000 feet and will carry a color ATV camera and transmitter, a 2 meter CW modulated FM beacon and a telemetry package. The telemetry package will encode barometric pressure and inside/outside temperatures on an AFSK signal modulating the TV sound sub-carrier. The ATV frequency will be 426.25 MHz and 2 meter beacon frequency will be 147.555 MHz. Forty meter and two meter nets will be conducted on 7.232 MHz and 146.34/.94 MHz, respectively. AMSAT member Jack Crabtree (AA0P) has put together the enthusiastic team of AMSAT members along with a Denver ATV group called Western Vision Network (WVN). The balloon will use the callsign of the Director of WVN, Tim Armagost (WB0TUB). All AMSAT members and radio amateurs within 500 miles of Denver, CO are encouraged to participate in this "edge of space" experiment.

On Dec. 1, 1990 at 9:30 A.M. CST (weather permitting) a helium balloon with a 1 watt 10 meter beacon transmitter named "Drifter-1" will be launched near Champaign, IL. The beacon, located on 28.866 MHz will be sending the following text at 20 WPM: "DE N9JL/B THIS IS DRIFTER-1, A 1 WATT BALLOON CARRIED BEACON. QSL VIA KA9WWA AR." The period of transmission will be determined by package temperature. A launch and tracking net will be held on

7155 KHz beginning at 8:30 A.M. CST with WE9E serving as NCS. This balloon has the potential to be heard direct up to 350 miles and throughout North America during a band opening. Send your QSL and a s.a.s.e. to receive a QSL for Drifter-1 to:

Drifter-1
c/o Jim Lutz (KA9WWA)
2032 Adams. St.
Rolling Meadows, IL 60008

Queries regarding Drifter-1 can be send to KA9SZX @ W9YH.IL.USA.NA. Listen for updates on the weekly 75 meter ATV net on 3871 KHz beginning at 8:00 P.M. EST on Tuesday evenings.
/EX
SB ALL @ AMSAT $ANS-314.04
ZRO TEST SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 314.04 FROM AMSAT HQ
SILVER SPRING, MD NOVEMBER 10, 1990
TO ALL RADIO AMATEURS BT

Fall Edition of ZRO Test Announced

The ZRO Memorial Technical Achievement Award Program, or just "ZRO Test" has a new schedule through the end of 1990 via AMSAT-OSCAR-13. This activity is a test of operating skill and equipment performance tested by copying signals decreasing in strength in predefined steps. At the beginning of the run, uplink power from the control station is set to match the general beacon downlink strength. This is level "zero". The control operator will send and repeat a random five-digit number, then lower uplink power by 3 dB (half power) and repeat the procedure with a new random number. This will continue to a level 27 dB below the beacon (level "nine"). A participating listener monitors the downlink signals till they can no longer copy the numbers. Those who can hear the beacon will qualify for the basic award by copying the code group heard at level "zero". The challenge is to improve station performance to a point where the lower-level downlink signals can be copied (levels 6 through 9). This then results in the need for less uplink power for routine communications operation.

The following schedule of Mode "B" and "JL" ZRO tests were chosen for convenient operating times and favorable squint angles. The "B" tests can be heard on 145.840 MHz and the "JL" test on 435.945 MHz.:

Saturday November 24, 1990 at 1700 UTC "B"
Saturday December 1, 1990 at 2030 UTC "B"
Saturday December 15, 1990 at 1630 UTC "B"
Saturday December 22, 1990 at 0530 UTC "B"
Saturday December 22, 1990 at 0645 UTC "JL"

Note that the dates and times are noted in "UTC." The tests on December 22nd occur late Friday night for those in North America. Any changes will be announced as soon as possible via the AMSAT HF and AO-13 Operations Nets as well as ANS. Recently updated ZRO brochures are available from WA5ZIB, Andy MacAllister, AMSAT V.P. User Operations, 14714 Knightsway Drive, Houston, TX 77083 for an S.A.S.E. with two units of postage. The brochure describes test procedures and means for obtaining certificates and gives some historical background about the program.

All listener reports with date of test and numbers copied should be sent to WA5ZIB at the address above. A report will be returned verifying the level of accurate reception. Good luck!
/EX
SB ALL @ AMSAT $ANS-314.05
DXCC ON OSCAR 0

HR AMSAT NEWS SERVICE BULLETIN 314.05 FROM AMSAT HQ
SILVER SPRING, MD NOVEMBER 10, 1990
TO ALL RADIO AMATEURS BT

First DXCC on the Earth's Original Satellite

On October 27, Dave Blaschke, W5UN, worked VS6BI to complete the world's first two-meter DXCC. Although his DXCC is not the first "Satellite" DXCC, what makes Dave's accomplishment so unique, is that each of his contacts on two-meters was done by bouncing his signal off the moon (a.k.a. OSCAR 0). An article describing Dave's station can be found in January 1989 QST (p. 15).

Dave's station (1.5KW TX power and 32.5 dBi antenna gain) was uniquely equipped to help AMSAT recover DO-17, which suffered from a receiver de-sensing problem last spring. AMSAT Congratulates Dave on this monumental accomplishment.

[ANS thanks Ray Soifer, W2RS, for the information for this bulletin.]
/EX
SB ALL @ AMSAT $ANS-314.06
PORTABLE 9.6K PACKET STATION

HR AMSAT NEWS SERVICE BULLETIN 314.06 FROM AMSAT HQ
SILVER SPRING, MD NOVEMBER 10, 1990
TO ALL RADIO AMATEURS BT

Effective, Low-Cost, Portable Packet Satellite Station Operational

Researchers at the University of Surrey took their portable packet satellite station out into the field and put it on the air last week. UoSAT/Microsat Software Developer, Jeff Ward G0/K8KA, used the 9.6KB semi-automated packet station to operate UO-14 from his flat (apartment).

As Jeff describes it, other than the antennas, the station fits in a metal carrying case about the size of a small briefcase. The RF gear (built by G0/VE3LMX in the UoSAT Lab) uses single-channel FM receiver and transmitter strips from Wood & Douglas with minor modifications. The transmitter generates 10W output, and no Doppler compensation is used. The receiver has a daughter board with an automatic frequency control circuit. This AFC sweeps the entire Doppler band until it detects the satellite, allowing for unattended operation.

The transmit/receive equipment costs less than $200. The system also uses a TINY 9600 modem (from Pac Com) which is added to the TNC as a daughter board. The TNC and modem both fit into the standard small extruded TNC case.

The receive antenna used was a 1.5 turn helix sitting on the ground pointed more or less straight up, with a turnstile for the uplink. Jeff's initial attempts with a 1/4 wave groundplane on receive gave little success. So as not to alarm his landlords, he put the antennas very close to the house. They are completely blocked on the south and west, but look fairly clear to the north and west.

On the evening of November 3, during a 60 degree pass east of his location, he managed to a connect to the spacecraft FTL0 BBS server, obtained a directory, uploaded a message and download about 16 kbytes. He then switched to the broadcast protocol, requested and received an AMSAT Keplerian element file. The next morning he was able to download a reply to his message. Jeff feels that he should be able to receive one hundred Kbytes of data on any pass of 10 degrees maximum elevation or better.

This effort shows that, as many people have shown in the past, you don't

need lots of money to get into this corner of the hobby.
/EX
SB ALL @ AMSAT $ANS-314.07
R.I. DXPEDITION A SUCCESS

HR AMSAT NEWS SERVICE BULLETIN 314.07 FROM AMSAT HQ
SILVER SPRING, MD NOVEMBER 10, 1990
TO ALL RADIO AMATEURS BT

DXpedition Proves to be Interesting on Both Sides of the QSO

AMSAT Volunteer Frank MacKensie-Lamb, NG1I, had been planning a DXpedition to the state of Rhode Island, but was undecided as to where to set it up. The week prior to his planned operation, Frank was contacted by a Ham in Rhode Island who had been interested in seeing an operational satellite station. Rather than have this potential newcomer drive up to Frank's QTH in Massachusetts, Frank decided to take the station down to the interested ham's QTH.

On Saturday, Nov 3rd, Frank drove to Lincoln R.I. and from the side yard of his host's QTH, NG1I/1 operated Mode B on AO-13 for approximately 5 hours. Because of advanced advertisement of his DXpedition in ANS as well as on the bird itself, a number of stations had already made plans to look for Frank that day and a mini-pileup ensued. By the end of his operation, Frank had logged 62 QSOs in 11 countries on 4 continents.

The interested host was extremely impressed by how little it took to get on the air on AO-13. Frank at times had to increase his output power to about 70 watts, due to poor squint angles, but as squint angles improved, he was able to throttle back to 45 watts and still carry on armchair copy QSOs, again proving that you don't need much power to carry on QSOs.

For those stations who did manage to help Frank demo his satellite station, his custom made QSL cards (made special for this DXpedition) can be obtained by mailing your cards to:

NG1I/1 Frank MacKensie-Lamb
P.O. Box 2058
Natick, MA 01760

One European station mentioned to Frank that he needed Wyoming, and he wondered if next weekend NG1I could do a DXpedition out to "0-land" Although Frank had to decline that particular request, it seems that the portable operation bug has bitten Frank, and so you may find additional satellite DXpeditions bearing the call NG1I (most likely they will be in the New England area).
/EX
SB ALL @ AMSAT $ANS-314.08
OPERATIONS NET SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 314.08 FROM AMSAT HQ
SILVER SPRING, MD NOVEMBER 10, 1990
TO ALL RADIO AMATEURS BT

AMSAT-NA Operations Net Schedule Announced

AMSAT Operations Nets are planned for the following times.
Mode B nets are conducted on an AO-13 downlink frequency of 145.950.
Mode J/L nets are conducted on an AO-13 downlink frequency of 435.970.

Date	Phs	mode	UTC	NCS	Alt.	U.S. day
17 Nov 90	145	B	1300	KA5SMA	WB9ANQ	Saturday
24 Nov 90	97	J/L	1430	WD0E	N5BF	Saturday

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02 Dec 90    63    B   1530  WB6LLO WA5ZIB  Sunday
08 Dec 90   156    B   1300  WB9ANQ KA5SMA  Saturday
15 Dec 90    97   J/L  1400   N5BF   WD0E   Saturday

STS-37 astronaut Jay Apt (N5QWL) will be the featured guest on the 24
November 90 net.  Jay will be discussing late plans for his own flight,
which is to be flown next spring, and STS-35, which is scheduled for
early December.  This roundtable/interview session with N5QWL promises
to be very interesting.

Nets are scheduled for North American geographic coverage and time zones
although other parts of the world are often within the footprint and check-ins
from everywhere are welcome.  Those who don't have adequate and convenient
coverage from this net are encouraged to schedule their own nets via AO-13.
Write to AMSAT Headquarters or send a note to N5BF @ WB6YMH with your schedule
to have it included in ANS.

For information on the amateur satellite program and how you can participate,
contact AMSAT-NA Headquarters at P.O. Box 27, Washington, DC 20044, phone
(301) 589-6062, or contact your local AMSAT Area Coordinator.
/EX
SB ALL @ AMSAT $ANS-314.09
FALL AO-13 TRANSPONDER SCHED

HR AMSAT NEWS SERVICE BULLETIN 314.09 FROM AMSAT HQ
SILVER SPRING, MD NOVEMBER 10, 1990
TO ALL RADIO AMATEURS BT

The transponder schedule for AO-13 is as follows:

 Mode-B :       MA 000 to MA 095
 Mode-JL:       MA 095 to MA 125
 Mode-LS:       MA 125 to MA 130
 Mode-S :       MA 130 to MA 135
 Mode-BS:       MA 135 to MA 140
 Mode-B :       MA 140 to MA 256
 Omnis  :       MA 220 to MA 040


This schedule is expected to continue through 26 Dec 90.

The Command Stations have oriented the spacecraft to an attitude of:

 BLON = 180  and  BLAT = 0


AMSAT-OSCAR-10 has come out of hibernation and appears to be receiving
sufficient solar panel illumination to support Mode-B transponder operations.
The transponder may be used, carefully, at all points of the orbit except MA
254 - 006 when eclipses occur.  If beacon or transponder signals show signs of
FMing, users should cease all transponder use immediately.
/EX


Tad Cook
Seattle, WA
Packet: KT7H @ N7HFZ.WA.USA.NA
Phone: 206/527-4089
MCI Mail: 3288544
Telex: 6503288544 MCI UW
USENET:...uw-beaver!sumax!amc-gw!ssc!tad
or, tad@ssc.UUCP
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